CHAPTER 1

The First, First Responder

Chapter Overview

This chapter lays the groundwork for understanding the complex role of the Emergency Medical Dispatcher (EMD) as the “first, first responder.” EMDs have the potential to make the difference, literally, between life and death, through proper application of the principles described in this book. The EMD’s specialized skills and equipment can minimize the risks faced by field personnel and enhance the quality of patient care.

This chapter describes the many purposes of Emergency Medical Dispatch. It includes the broader historical and anecdotal perspective and research collected since this book’s first edition. It also summarizes the reasons the EMD system has become the national standard for Emergency Medical Dispatchers.

Emergency Medical Dispatch is the jewel upon which the watch movement of public safety turns.

—F. Hurtado
The team approach to emergency medicine is well established. As patients traverse the medical system, they generally encounter prehospital life support providers—first basic, then advanced. Then come the healthcare providers in the emergency department, followed typically by in-hospital personnel. Within the process, however, there is one group of people well insulated from the sights, sounds, and activities of hands-on emergency assistance: the dispatchers. Because of their isolation, they have not traditionally been regarded as members of the emergency medical team.

When emergency medical services (EMS) were modernized, beginning in the late 1960s, development of the people in the alarm office or radio room, as it was called, was overlooked. If anything, these people were maligned and misunderstood. Fortunately, the intervening years have been kinder. Increasingly, Emergency Medical Dispatchers (EMDs) are recognized as the spearhead of the emergency medical services team. EMDs know what to do and how to help in their own special way. Instead of being the weak link in the chain of medical care (the historical perception), they are increasingly the hub of a worthwhile community service.

The purposes of Emergency Medical Dispatch (EMD) are numerous and impact many aspects of emergency medical care. A properly trained EMD utilizing a fully implemented Medical Priority Dispatch System™ (MPDS®) has a significant and positive influence in the following areas:

- The quality of patient care
- The performance of prehospital EMS providers
- The cost-effective allocation of EMS equipment
- The professionalism of individual EMDs
- The community’s EMS experience

The International Standard

Before the advent of Emergency Medical Dispatch and the Medical Priority Dispatch System (together known as priority dispatch), much of the information gathered by dispatchers was unclear, incomplete, or distorted. A critical purpose of priority dispatch is to create for the EMS system the same benefit that a lens creates for a camera. Priority dispatch is the lens of EMS. All initial information comes through it. Priority dispatch provides the capability to focus clearly on each situation, eliminating inconsistency and vagueness through its standard, precise approach to each call.

The calltaker has the ability to have a profound effect on all patients. This is why dispatch is the hub of the EMS circle of care. The chance to give CPR (cardiopulmonary resuscitation), deliver a baby, or use an automatic defibrillator happens on a case-by-case basis for field crews, but these situations may be happening all at once for the EMD. Thus the EMD has an impact on 100 percent of emergency medical calls. A system that promotes EMD excellence—focusing the EMD’s efforts and talents on customer service to the caller, patient care to the victim, and on the rational, informed dispatching of EMS responders—improves the quality of service to the entire community.

Numerous factors identify the EMD and priority dispatch as the international standard of care. Since their initial development in 1976, the concepts described in this book have been refined and disseminated to thousands of municipalities throughout every U.S. state and Canadian province, all ambulance trusts in the United Kingdom, and 19 other countries. As cases of successful telephone instruction have been increasingly reported in the media, public expectations have changed.

Industry use of EMD tends to follow a generally accepted format. Position papers from influential organizations (see references) and other supportive documentation of the principles of EMD have solidified its place in the evolution of EMS. Administrative rules and regulations concerning dispatch roles and procedures have been bolstered, in many places, by legislation. Finally, certain cases have been brought to the judicial system for resolution, and legal outcomes have universally supported proper implementation of a priority dispatch system.

It is a human characteristic to resist change. But dispatchers with no previous medical training can certainly learn to make informed decisions using priority dispatch when properly trained.

The EMD is the sole authority over an emergency scene until the first responding crew can make initial assessments and establish scene control. (In essence, the “scene commander” until someone physically reaches the scene.) Until that moment, the EMD knows more about the scene than anyone else in the
emergency care pipeline. Through telephone interrogation, the EMD can continually access patient information. This information is then used to select the appropriate response for each call. Unsafe situations can be identified and relayed almost instantly to responding crews. Additionally, the EMD can provide directions to the caller about what to do, or what not to do, on the patient’s behalf.

All these actions can help avert unnecessary tragedy. EMS and public safety systems place themselves at risk if they fail to appropriately develop and support their communication specialists.

**Impact on Quality Patient Care**

The welfare of the patient is of primary importance to the EMS system. The mission of EMS is to help others, not just to save lives. One of the finest examples of how EMD benefits each patient is the concept of Zero-Minute Response™.

Much attention has been placed on the importance of quick response times by emergency medical crews. People in life-threatening circumstances need immediate help. Yet a certain amount of response time always exists. In general, studies have shown that there is a delay of about two minutes—even after a cardiac arrest—before anyone calls for help. Excellent call processing time (the time it takes to answer the call, evaluate, and get responders’ wheels turning) is 60 to 90 seconds.

An excellent average response time, once wheels are rolling to the address, would range from five to ten minutes. Then, additional time (average 1½ minutes) ticks by while crews leave the emergency vehicle and make actual contact with the patient (see fig. 1-1).

Thus, the best to-the-patient time often exceeds eight minutes, during which time the patient may not be receiving any care.

A properly-trained EMD can effectively eliminate this time gap for many situations. Willing bystanders can provide first aid via telephone instructions. In fact, callers increasingly expect to be coached in this way. If oxygenated blood can be pumped to a clinically dead brain within one minute due to the combined efforts of an EMD and the people at the scene, this response is obviously better than waiting seven—and sometimes ten or more—minutes for trained people to arrive at the patient’s side. This concept, trademarked as the Zero-Minute Response, is changing the complexion of emergency care.

Impact on quality patient care also stems from sending the appropriate EMS response. A prime objective of priority dispatch is to send the right resources to each call. The positive impact on patients is obvious when an EMD can differentiate minor from possibly severe situations. Someone with a cardiac emergency receives Advanced Life Support (ALS) help, and someone with a cut finger receives a perfectly suitable Basic Life Support (BLS) provider. Or, in a differently designed EMS system, the whole volunteer squad is toned out for a three-car crash with multiple injuries—but only the two volunteers on first call need to drop everything to respond to a single-car accident with minor injuries. Appropriate resource allocation depends on a proper interrogation-based evaluation, which depends on knowing the necessary questions to ask.

**Impact on the EMD**

Historically, many public safety administrators believed all it took to be a dispatcher was the ability to push buttons and talk on the phone; anybody (literally) could do it. The dispatch office and those stuck there were not well-respected.

EMD education has now given dispatchers a new lease on their professional life. A cycle of improved pride among EMDs raises morale, which naturally makes the dispatch office a more appealing place to work. The increased appeal draws in employees of increasing quality and ability. The communication center is no longer an EMS dumping ground; rather, it is a proving ground.

**Authors’ Note**

Since the methodology of EMD became accepted as the U.S. national standard of dispatch care and practice, EMS systems that have lagged behind appear to be in mounting jeopardy, a trend being copied internationally. The success of EMD as the standard of care in the U.S., Canada, the U.K., Austria, Italy, and Switzerland has prompted other countries to adopt EMD, to the point that the science of EMD is now generally accepted as the international standard of care and practice.
The vehicle-at-scene to patient-access interval is the time between the ambulance arriving at the scene and responder arriving at the patient’s side. This time period is not normally distributed, so it is best presented as a median value and interquartile range rather than mean and standard deviation.

Using third-party observers on 216 ambulance responses, Campbell reported the median arrival-to-patient time was 1.33 minutes, with an interquartile range of 0.67 to 4.13 minutes (the interquartile range defines the 25th and 75th percentiles). Further research, using the CAD clocks rather than direct observation, gave similar estimates of the vehicle-at-scene to patient-access interval: a median of 1.3 minutes with an interquartile range of 0.8 to 2.6 minutes.

The 216 responses that were observed by a third party could be divided into two classes: those where barriers were present, and those where the responder’s access to the patient was unhindered. There were 122 responses (56.5 percent) with barriers present and 94 responses without.

In those responses that were hindered by barriers, between one and seven barriers were encountered. Major barriers included doors (25 percent, locked 14.8 percent), stairways (19.9 percent), and crowds or bystanders (7.4 percent). Police secured the scene in 12 percent of incidents; police scene security contributed to the longest recorded patient access time (38.7 minutes).

For responses that encountered barriers, the median patient access time was 2.29 minutes (interquartile range of 1.01 to 4.82 minutes). For responses that were free of barriers, the median patient access time was 0.82 minutes (0.37 to 1.96 minutes). The differences between the barrier and no barrier data are statistically significant (p < 0.001).

It should be remembered that it is often the ambulance’s arrival at the scene that provides the time stamp used to determine the response time. When this is the case, the vehicle-at-scene to patient-access interval is often not accounted for. Although in the 216 responses Campbell studied, the median vehicle-at-scene to patient-access time was only 1.33 minutes, in 25 percent of those responses, it took over 4 minutes for the responder to arrive at the patient’s side after the ambulance had “arrived” at the scene.

Fig. 1-1. Vehicle-at-scene to patient-access time intervals.

The result is a skyrocketing sense of professionalism. No longer the bottom rung of the ladder, EMDs are proud of their work. They are eager to share their stories and to learn yet-better ways to do their job. They have the air of confidence that stems from knowing that coordinating the entire EMS system is something only a few people can do well.

The opportunity to make a difference has increased dispatcher morale. Stories are abundant of over-the-phone lifesaving intervention. Impacting lives, not pushing plastic buttons, is the name of the EMD game, and the result is tremendously improved job satisfaction. No longer does an EMD simply obtain the address and callback number and hang up. EMD (versus unqualified dispatcher) enthusiasm is justifiable and common.

News clippings from throughout the world share the joy of EMD success in providing post-dispatch first aid instructions to lay persons. For example:

“[EMD] is the greatest thing that ever happened to dispatching,” said Ann Marie Cartwright, an EMD formerly with Sacramento Regional Fire-EMS Communication Center in California. An 11-year veteran of EMS dispatching at the time, she said, “I can’t help but think of how many lives could have been saved if we had had the education, the ability, and the permission to do this earlier.”

Another part of increased professionalism and improved morale lies with the field personnel recognition of communication specialists as an important part...
of the EMS team. Few would question that a definite sense of separation long existed between field providers and the voice on the radio. The norm in many places was for dispatchers to indulge in power-trips whenever possible as retaliation for various antics and disrespectful behavior leveled at them by the field personnel. The “Us versus Them” cold-war relationship is being gradually replaced by a more professional alliance between these groups now seen as members of the same team (see fig. 1-2).

Being part of the team also means occasionally being part of the hurt. Some calls are tragic. Formerly, dispatchers had no idea what field personnel went through; now, the EMD is more present, by phone. When the gun goes off, when a beating continues, or when the choking worsens, the EMD is still listening. Appropriate follow-up is obviously important; the EMD needs to manage the stress as detailed in Chapter 10: Stress Management in Dispatch.

Finally, EMD has been responsible for some good news in the communication center that has been a long time coming. Keller reported in JEMS that:

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**My First Experience with Emergency Medical Dispatch**

I received the call on 9-1-1 at approximately 0255. The victim is a 7-year-old girl. The girl’s mother was the one who called. She told me, “My little girl has stopped breathing.” I immediately paged the ambulance while trying to calm the mother.

At this time I radioed Bob Hawley, who was working with me, and had him return to the station. I told the mother to not hang up the phone and asked if there was anybody else there with her. She told me that her husband was with the girl. I established that the girl was not choking because she had been sleeping for a few hours. The mother told me that the girl couldn’t breathe at all and was starting to turn blue.

I asked if anyone there knew how to do mouth-to-mouth resuscitation or CPR, and she responded “No.” I told her to relay instructions to her husband because he would have to breathe for her. He then started to breathe for her, but couldn’t get a pulse.

About this time, the ambulance crew left the station. The house is in the community of Heath, about 20 miles in the mountains. I began relaying directions to the house and informed the crew of what was happening.

After the ambulance left, Hawley came into the dispatch room. I told him what we had. He then talked with the mother. Hawley was teaching an EMT class, and one of the people in the class was a neighbor to these people. Hawley had the lady hang up and call this neighbor, Gregory. Hawley also told her to call us back after she contacted Gregory. When she called back, Hawley began talking them through CPR. After a few minutes Gregory arrived and began doing CPR. This entire time span since beginning to this point was about 4 to 5 minutes.

Gregory and the girl’s father continued doing the CPR until the ambulance arrived, which was just about 30 minutes after I first received the call.

When the ambulance got there, the girl still had no pulse and was not breathing. Her pupils were fixed and dilated also. The ambulance continued the CPR until they arrived at the hospital. The girl was pronounced dead on arrival.

Even though the girl died, the training I had received through the Dispatch RT school on Emergency Medical Dispatch was invaluable. I was able to control my own emotions and also control the mother’s emotions. We learned in the school to keep the party on the phone and relay instructions to another person. The procedure worked exactly as planned. It is amazing how effectively it worked.

I only wish the parents had called us quicker. The mother said that it had been 10 to 15 minutes since the girl had quit breathing before we were called. Maybe we could have helped to save the girl’s life if she had called sooner.

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Fig. 1-2. “My First Experience with Emergency Medical Dispatch” by Don McCoy, Lewiston P.D., Montana, 1982.
One of the most encouraging trends demonstrated in this analysis is the marked improvement in dispatcher salaries. It is hoped that this is due to recognition of the importance of these individuals in the performance of modern EMS systems.

Impact on Prehospital Providers

EMD also provides demonstrable benefits for field personnel. These include safety, minimization of stress, increased knowledge about a situation before arrival, and improved interagency cooperation.

From a safety perspective, positive public perception of emergency services is created when the initial telephone interaction has a confident, helpful tone. A good EMD knows how to be the vocal salve to calm callers and help them through the first frightening minutes of an emergency. This paves the way for field personnel to arrive to a more receptive welcome. A reputation for helpfulness from the outset of a medical crisis has a ripple effect throughout the community; an “everything that could be done, was done” feeling is often relayed to scene personnel; callers tell others of an experience that, despite its unhappy nature, was positively handled.

Safety is enhanced when the EMD can provide responders with information about potential scene hazards. An increased sense of control and cooperation emerges among bystanders who have been “put to work” providing first aid, making them easier to work with. Furthermore, EMDs can readily distinguish levels of severity for emergency calls and send field personnel without lights-and-siren, making it safer for everyone on the roadway.

The archive of Emergency Medical Vehicle Collisions (EMVCs) is full of stories about collisions that have killed or permanently injured people. In Richfield, Utah, a headline read: “Seven Injured as Ambulance, Truck Collide.” A grain truck tried to turn left while the ambulance, running with lights-and-siren (referred to in this text as HOT), was next to it, passing.

In Bloomington, Illinois, a young lady riding in a pick-up truck was hit broadside by an ambulance running HOT on a sprained ankle call. Sharron Rose Frieburg—then 18 and an honors student—became permanently disabled (physically and mentally) as a result of the collision (see fig. 1-3). Besides the irreversible personal effects, the financial cost of this incident to the city totaled $5 million in cash payments, including $2,000 per month for 10 years and $3,000 per month after that. Such stories are far from unique. A study done by the International Academy of Emergency Medical Dispatch® (IAEMD™) in 1990, through subscription to a national press-clipping service, counted 298 emergency medical vehicle collisions, resulting in 537 injuries and 62 fatalities. That equates to one death every 5.9 days in North America involving EMS responses.

Another way the EMD can positively impact the lives of field personnel is in the rational allocation of resources. On many calls, the EMD can safely send fewer responders. This is true in any type of EMS system, from rural volunteer to inner-city, complex, tiered systems. The result is a more efficient use of resources and less wear-and-tear emotionally and physically on personnel—without jeopardizing patients. Fewer responders have to disrupt off-call activities, which is particularly relevant to volunteers or 24-hour shift workers who may be trying to sleep, train, inspect, or perform other duties.

Fig. 1-3. Sharron Rose Frieburg, before and after the emergency medical vehicle collision that seriously disabled her.
It is also helpful for field personnel to know certain details about the scene ahead of time. Several protocols have questions relating to scene safety, such as whether a fire is still burning, whether there are known weapons, or whether an assailant is still present. Answers to these questions help minimize high stress levels common to field personnel, which, in turn, improves morale. Increased contentment among employees tends to reduce attrition. A long-term field provider knows the layout of the district better (resulting in improved response times) and has better street sense. Field personnel tend to be more compassionate and professional when they know their skills and energy will be suitably matched to each situation.

Once the medical decision-making professionalism of well-trained EMDs becomes apparent to responders, an increase in teamwork becomes evident between the dispatch center and the field. What has been described as the public safety version of the "cold war" between dispatch and the field slowly yields to a more synergistic harmony of colleagues.

Figure 1-4 is the earliest known written document both recognizing and, more importantly, praising the actions of an early EMD's efforts to help via phone (see Choking on a Marshmallow, Chapter 8: Time-Life Priority Situations, fig. 8-13, for a full transcript).

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Fire Station #5
October 28, 1983

Peter O. Pederson, Chief
Fire Department

Sir:

On October 19, 1983 at 2010 hrs. we were dispatched to 450 Williams Avenue on a choking woman. Upon our arrival at 2012 hrs. we found Minnie Orr lying on the kitchen floor. The report that we received was that she was choking and not breathing. She had choked on a marshmallow which lodged in her throat. When we arrived we found her breathing normally.

Her son informed us that she had stopped breathing and was turning blue. He also stated that he felt that she would have died had he not received the instructions that he did from the dispatcher for the Fire Department. Patricia Holt had instructed him over the phone in the action of the Heimlich Maneuver.

We feel inclined to agree with him and wish to commend Patricia for her excellent actions in handling the emergency. If you would be kind enough to pass on this letter of commendation to the proper parties we would appreciate it.

For the crew at #5 station "A" Oplatoon!

Respectfully,

Kirk Arnold, Captain

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Fig. 1-4. Earliest known document of field personnel praising an EMD.
Impact on Equipment

Any program that decreases the rate of EMVCs has a beneficial impact on equipment. One letter to an industry journal describes three goals held by the EMS system when choosing to implement priority dispatch: Post-Dispatch Instructions, accurate Pre-Arrival Instructions, and reducing HOT responses.

By far, the third goal . . . has been the most obvious improvement in our service. We have reduced [HOT] responses by 35 percent, and now on minor medical calls, the closest basic life support engine is dispatched without advanced life support back up.

—Deputy Chief Darrel Willis, Prescott, Arizona

And to expensive equipment! Reducing HOT responses obviously reduces equipment wear and maintenance. More subtle reductions in this area derive from a reduction of equipment abuse by over-tired, over-stressed employees. It is not a coincidence that ambulance services often have difficulty maintaining their equipment. Breakage increases, predictably, when those using it suffer elevated levels of physical and emotional exhaustion. Poor maintenance and handling is a common cause of equipment failure and damage. Someone exhausted by a badly designed EMS system will not be as careful with expensive equipment as someone who knows each call was carefully scrutinized and appropriately dispatched. This translates directly into cost savings for budget-conscious managers.

Impact on the Community at Large

Examined from the point of view of the overall community, the EMD positively impacts a number of lives. The decrease in lights-and-siren responses alone results in diminished disruption of traffic flow in the community. This decreases emergency-related accidents. Estimates indicate that total annual emergency medical vehicle collisions and less-evident wake-effect collisions exceed 50,000 in the U.S. Wake-effect collisions are those that appear to be caused by the passage of an emergency vehicle, but do not involve the emergency vehicle itself.13

Estimates indicate that total annual emergency medical vehicle collisions and less-evident wake-effect collisions exceed 50,000 in the U.S.

In fact, there may be as many as five citizen crashes for each one involving an ambulance. By minimizing lights-and-siren responses, EMD has a clearly beneficial impact on these figures. All too often, what seems to be a senseless death is blamed on the community’s failure to look out on the highway. However, it is not reasonable to expect to educate the entire population of a given nation regarding what to do when approached or startled by a rapidly approaching emergency vehicle. Diminishing death and damage is truly the responsibility of emergency system designers.17
Increased quality of dispatchers also has a positive impact on the community. Imagine the fear callers experience when confronted by a medical crisis. Also imagine the dislike many people have in admitting the need for help. Historically, there have always been outstanding dispatchers. But others have been disgruntled, unfriendly, gruff, and sometimes downright rude and unhelpful to callers. When a caller encounters an EMD with a higher degree of job satisfaction, who has mastered basic telecommunication techniques, and who knows how to maintain a positive tone, the beneficial impact is obvious.

In addition, increased standardization of the dispatch process has increased predictability of what to expect. For anxious callers, this removes some fear of the unknown that is inherent in their responses to an emergency. If the community can rest assured that those in the emergency services ranks are likely to respond in a consistent and helpful manner, the public trust is increased, and everyone shares the advantage.

**Profile of EMD Duties**

For the EMD to have the impact described, he or she must be a multi-task specialist. There are four general functions:

1. To receive and process telephone calls. These often come in batches, as multiple phone lines are used at once. The public-access lines may light up at the same time. Protocolized expert decision-making, based on the objectives that must be determined on each case, are required to successfully practice this form of patient care. Adherence to the standard of care and practice ensures optimal performance and outcomes.

2. To dispatch and coordinate EMS resources. The EMD coordinates radio traffic, often over several frequencies. There may be several EMS teams on different calls at once, radioing with various needs to be addressed by the EMD. Or, several EMS teams may be isolated at the same situation, requiring the EMD to act as central coordinator.

3. To provide medical instructions to callers and scene information to EMS crews. The public typically has come to expect dispatchers to help them with their emergencies. Post-Dispatch and Pre-Arrival Instructions are an important cornerstone of the EMD process. In addition, the EMD can prepare responding crews by informing them of relevant medical and safety information.

4. To coordinate with other public-safety agencies. This may be via a special telephone, a different radio frequency, or both. It may be to summon help or to hand off a situation that should be properly handled by another local emergency provider. Some situations are even handed over to other public service providers, such as the electric or water company.

Any one of these four main functions is demanding in itself. When they are all happening at once, the challenge of maintaining a clear head and calm demeanor intensifies. Clearly, it is a job designed only for a select few specially talented people.
The actual role of a professional medical dispatcher can be summarized as follows:

**Telephone Interrogation (input).** Notification of a problem in the community comes to the dispatcher first. Input to the entire EMS system begins here, with the first, first responder. Obtaining the appropriate information routinely can be demanding, but professional EMDs are expected to do it. The EMD will have more comprehensive knowledge about the situation than anyone responding until emergency personnel arrive at the scene.

**Triage.** The EMD allocates system resources to their most appropriate use. This is done by differentiating life-threatening situations from those where fewer units (or EMS personnel of more basic-level education) can safely be sent, often without using lights-and-siren. Savings in both physical and emotional terms are both measurable and substantial.

**Dispatch Allocation and Field Communication (output).** Field communication completes the input-output loop. Important information is delivered succinctly to personnel. Responders traveling to the scene can receive continually updated information about scene hazards, violence, exact location, and changing patient condition.

**Logistics Coordination.** The dispatcher maintains sight of the “big picture.” The EMD knows where all emergency crews are at all times. Resources can be allocated based on the immediate needs of the system, balanced by the requirements for district-wide coverage. This allows field personnel to concentrate on their individual tasks without having to worry about the overall state of the EMS system.

**Resource Networking.** The EMD knows how to access support resources. These may be backup ambulances (from within the system or through mutual-aid agreements with neighboring services), police coverage, the regional poison control center, hazardous material information, child-abuse caseworkers, power companies, and anything else needed by on-scene EMS personnel. The dispatch center is the hub of the information wheel, and a professional EMD knows what is available and how to find it.

**Life-Impacting Via Telephone Instruction.** This part of the dispatch role is most well-recognized, thanks to media coverage of success stories. The first recorded efforts at “medical self-help” (as it was called) occurred in 1974 in Phoenix, Arizona. Since then, hundreds, if not thousands, of accounts of positive results from pre-arrival telephone instruction have joined the EMD track record. Even when a life is not threatened, the EMD has the opportunity to impact lives positively through telephone intervention.

The listed roles and functions depict the EMD as much more than someone who simply answers the telephone and radio. EMDs know how to continually handle radio and telephone traffic promptly and professionally.

To consider a broader view of the EMD, this professional is a system advocate. The EMD knows how to use resources that are inevitably limited so they can serve for the good of the many.

**Misconceptions and the Facts about EMD**

From its inception, EMD has grown, through healthy skepticism, into what is now considered the standard of care and practice in many countries. During this evolution (to some, more of a revolution), various misconceptions, which blocked initial progress, were debated and finally laid to rest. An examination of
CHAPTER 1

The nine most common misconceptions about EMD can help overcome traditional resistance to change:

1. The caller is too upset to respond accurately.
2. The caller doesn’t know the required information.
3. The dispatcher is too busy to waste time asking questions, giving instructions, or flipping through card files.
4. The medical expertise of the dispatcher is not important.
5. Phone information from dispatchers cannot help victims and may even be dangerous.
6. More personnel and more units at the scene are always better.
7. It’s dangerous not to maximally respond or not to respond lights-and-siren.
8. Protocol and training is all that’s needed to “do EMD.”
9. We can do this stuff ourselves (home-grow our protocols).

The tape of this call was used around the country for several years to help pass paramedic legislation (see Phoenix Call—Baby Fell in Pool, Chapter 5: Caller Management Techniques for a full transcript of this call).

Fig. 1-9. Bill Toon’s description of giving the first recorded pre-arrival instructions.
Misconception One. The caller is too upset to respond accurately.

The Facts. One of the most universal notions encountered in public safety dispatching is that emergency callers are “hysterical” and “uncooperative.” This is simply untrue. Most callers are calm. In fact, about 96 percent of callers are able to work effectively with the EMD. Although some callers may initially need help calming down or focusing, a professional EMD knows the telecommunication tactics to try and has the patience to use them. The misconception that the caller is too upset to respond accurately may be the dispatch equivalent of what is called the “campfire story syndrome.” An interesting psychological process, this term stems from the ritual of gathering around the campfire and recounting (or remembering) stories of hunting and fishing, of accidents and encounters that involve the best or worst, the most bizarre, most extreme, or intense experiences. This same process contributes to the “too hysterical” misconception in EMD; the recollection of events experienced in dispatch may be skewed so that only those situations that were particularly challenging, or unusually colorful and interesting, are recounted. No one wants to admit that the nature of their job is easy or uneventful, especially in public safety professions.

The impression that most callers are out of control is statistically incorrect. A 1984 random case study by the Salt Lake City Fire Department’s Medical Dispatch Review Committee classified only 4 percent of their callers as hysterical. An independent State of Utah EMD Instructor, reviewing the same cases, validated this finding. In 1986, Eisenberg, et al., studied 640 calls to a communication center in the U.S. Pacific Northwest, using a simple emotional scale to describe the caller’s emotional content.7 The scale ranged from normal, conversational speech (1) to extreme emotional distress (5). The average score for 146 non-cardiac arrest callers was 1.4, and for 494 cardiac arrest callers was only 2.1. The Academy uses the following similar scale during routine quality assurance case review to assign each caller an Emotional Content and Cooperation Score (ECCS) at the beginning and end of each call:

5 Uncontrollable, hysterical
4 Uncooperative, not listening, yelling
3 Moderately upset but cooperative
2 Anxious but cooperative
1 Normal conversational speech

Using this scoring process, a 6,400-case study was performed.10 Data collected from British Columbia included 3,019 cases. The overall ECCS was 1.05.

1st party callers — ECCS was 1.02 (n=277)
2nd party callers — ECCS was 1.07 (n=1941)
3rd party callers — ECCS was 1.02 (n=511)
4th party callers — ECCS was 1.0 (n=290)

An analysis of 3,430 cases from Monroe County, New York, showed remarkably similar results. With the majority of callers exhibiting an ECCS of only slightly over 1, maybe the important question should be “Who’s calmer—the caller or the calltaker?”

Thinking is easy, acting difficult, and to put one’s thoughts into action is the most difficult thing in the world.

— Johann Wolfgang von Goethe

The 3,019 British Columbia calls were subdivided into calls that could reasonably be expected to involve cardiac arrests (MPDS Protocol 9) and all other calls. There were 358 Protocol 9 calls, with an average ECCS of 1.22; the remaining 2,661 non-Protocol 9 calls had an average ECCS of 1.03. Again, very similar results were obtained using the 3,430 Monroe County calls. While relationships can be identified between the ECCS and the caller party and nature of call, the overall scores are very low, and the differences are too small to be of practical value.

Some callers are upset by little things, and some are remarkably calm in the light of tragic events. Most callers, however, keep their emotions under strict control when requesting 9-1-1 emergency assistance. In 1981, legal expert James George commented:

Without a unified system, one dispatcher may decide that a crucial situation exists primarily on the level of emotion he detects in the caller’s voice, while another may depend on his own “gut” reaction, without being able to articulate a clear reason for his decision.18

The data show that most callers are, in fact, remarkably calm, but regardless of the caller’s emotional state,
Most callers should know something about the victim. Theoretically, more than 70 percent of callers are first- and second-party callers and therefore can provide information and some help, although some, unfortunately, still focus on the 30 percent who are third-party callers—yet even these callers can often provide critical information. Should some callers be denied the opportunity to help just because some professionals are unable or unwilling to believe they can? Prioritizing EMS resources properly because the caller can answer basic questions serves the system. And if the caller is calm enough (or calmed enough) and follows the EMD’s lead in providing pre-arrival first aid, so much the better. In fact, many callers now expect to be told how to assist properly.

**Authors’ Note**

In actual QA case review, it has been our universal experience that dispatchers functioning on their own (even if aided, as they say, by an infinite number of monkeys provided with an infinite number of typewriters) will never replicate the questions listed on Protocol 32: Unknown Problem (Person Down).

---

**A Failure to Communicate**

<table>
<thead>
<tr>
<th>Dispatcher:</th>
<th>Nine-one-one, what is your emergency?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Caller:</td>
<td>We need the paramedics over to the Fashion Place Mall right away.</td>
</tr>
<tr>
<td>Dispatcher:</td>
<td>What seems to be the problem there, ma’am?</td>
</tr>
<tr>
<td>Caller:</td>
<td>[Brief pause] Ah, I don’t know what’s the matter with him. I’m not a doctor.</td>
</tr>
<tr>
<td>Dispatcher:</td>
<td>[Longer pause] Well, does he have any medical identification tags or bracelets or anything?</td>
</tr>
<tr>
<td>Caller:</td>
<td>Look, I don’t know. I’m not a doctor.</td>
</tr>
<tr>
<td>Dispatcher:</td>
<td>[Somewhat despairingly] Okay then. You say you don’t know?</td>
</tr>
<tr>
<td>Caller:</td>
<td>Like I said, I’m not a doctor.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Dispatcher:</th>
<th>[Typing into the CAD and resigned to send now]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Okay. [The EMD can faintly make out muffled noises in the background, becoming clearer as she stops typing: One, two, three, four, five, whooo . . . one, two, three, four, five, whoooo . . . one, two . . . at which point the EMD nervously blurs out:] What’s that noise? What’s that . . . counting? What are they doing?</td>
<td></td>
</tr>
<tr>
<td>Caller:</td>
<td>[Matter-of-factly] Oh, they’re doing CPR.</td>
</tr>
</tbody>
</table>

---

**Fig. 1-10.** This call, received from the security office of a large shopping center, demonstrates the “If you don’t ask the right questions . . .” problem.
The “Time Standard” Dinosaur at Dispatch

The “time” issue is always mentioned as a reason why using a “scripted” fixed set of questions “just can’t work” in dispatch. Structured calltaking “takes too much time.” While this notion is still widespread, it just isn’t true. If time is truly a global concern, we need to know what amount of time each stage of the dispatch process takes and, just as importantly, which processes contain the greatest amount of variability (unpredictability).

The two variable processes that the protocol doesn’t really account for (and that shouldn’t be judged against the protocol structure) are the time to obtain and verify the correct address and callback number. These policies are quite different from agency to agency, while many agencies have no written policy. These polices include: how to obtain and enter addresses, whether to obtain cross streets or not, when to get GPS info as well, and then quite varied verification methods (or lack thereof). We have seen these two processes literally double the basic interrogation time at different agencies.

However, after these two essential bits of data are obtained, we know exactly how long it takes to reach the send point in each Determinant Level as well as on each Chief Complaint within the protocol. Obviously, the varied number of first- vs. second- vs. third-party callers encountered on different protocols, as well as the types of information asked (visible things vs. things that we must ask the patient or family about) will determine just how much time it takes to reach the send point (or to complete all Key Questions) in every case. But having access to large numbers of computerized cases, mainly from Accredited centers, we basically know what these times are; and they appear to be quite predictable from system to system.

Relying on a “one-time-fits-all” standard (say of 60 seconds total) for each call makes no sense since we are dealing with very different interrogation conditions at the scene as well as determining facts surrounding simple vs. complex problems. It is literally a pseudo-standard. A single delimited time standard historically exists only where there is a lack of known data that would otherwise allow us to create a spectrum of acceptable times based on the urgency and complexity of each varied situation. Before we knew how to do this, we had no choice but to default to a “one-time-fits-all” standard, if indeed we wanted any “standard” at all. This is not the case today.

The current “one-time-fits-all” makes about as much sense as saying that all surgeries must take an hour. That’s great if it’s a tonsillectomy, but not so good if it is a heart transplant or total hip replacement. Likewise, if we are operating on eyes or brains, basic common sense tells us that we must be more careful and move a little slower to assure not cutting into something vital or irreplaceable. Certain dispatch cases are just like this. And in most cases, the tiny bit of time used to “get it right” is insignificant to the total time or even the actual outcome.

We know that each question represents an objective that is necessary to know in handling that case and doing it right. If the medical, fire, or police experts determine that a particular bit of information isn’t a necessary objective for that specialty, then it shouldn’t be in the emergency dispatcher’s interrogation. (Believe me, the various Standards Councils ride heavy herd on this.) The oft-quoted 60-second timeframe should really only even come close to applying when limited to the interrogation-to-send time after ANI/ALI determination and verification. These two processes, plus interrogation, cannot possibly be done in less than a minute for all calls unless we just send the Marine Corps to everyone, “no questions asked” to coin a phrase. The “one-time-fits-all” standard cannot continue to exist without throwing out 25 years of accumulated dispatch science.

The Academy is currently compiling a more specific list of time standards that can reasonably be relied on, which will be based on real data of thousands, if not millions, of cases. For example, “Is s/he completely awake (alert)?” takes less than 4 seconds to ask and answer. This may vary a small amount depending on the protocol on which it is asked. A protocol with 2 objectives will obviously take less time than one with 5. Those with additional safety objectives require more time than those without. We have this data in raw form and have provided a partial example [here].
Protocol “question cutters” and “early senders” do their systems a big disfavor by shortcutting these accuracy and completeness-of-information safeguards, just to save a few often meaningless seconds. Hurrying at dispatch is about as smart as hurrying in bomb defusing.

This dilemma is one of the misconceptions of dispatch that is finally and thankfully starting to go by the wayside. The single time-based standard of dispatch interrogation has about as much evidence to support it as locating weapons of mass destruction does now in Iraq. There simply is no data, scientific or otherwise, to support it. I hope you get the picture.

Remember Bradshaw’s Law: “It’s time we start doing it right, not just fast.”

The data below shows times for different levels of clinical and situational urgency as represented by the six Determinant Levels (OMEGA through ECHO). These times begin in ProQA® at “Okay, tell me exactly what happened” until the dispatch (send) recommendation is made in or at the end of Key Questioning when the case is pended in CAD to the radio dispatcher. The time it takes to obtain and/or verify the correct address and callback number is done in CAD and is not part of this time. The location/callback part of Case Entry is the most unpredictable and subject to both caller and EMD influence—not the time intervals represented in this grid.

### The “Time Standard” Dinosaur at Dispatch

<table>
<thead>
<tr>
<th>Determinant Level</th>
<th>Interrogation Time</th>
<th>Number of Cases</th>
<th>Percentage of Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECHO</td>
<td></td>
<td>80,307</td>
<td>33.8%</td>
</tr>
<tr>
<td>DELTA</td>
<td>:33</td>
<td>55,778</td>
<td>23.5%</td>
</tr>
<tr>
<td>CHARLIE</td>
<td>:42</td>
<td>52,271</td>
<td>22.0%</td>
</tr>
<tr>
<td>BRAVO</td>
<td>:37</td>
<td>48,868</td>
<td>20.6%</td>
</tr>
<tr>
<td>ALPHA</td>
<td>:46</td>
<td>219</td>
<td>0.1%</td>
</tr>
<tr>
<td>OMEGA</td>
<td>:43</td>
<td>237,443</td>
<td>100%</td>
</tr>
<tr>
<td><strong>ALL</strong></td>
<td>:39</td>
<td>237,443</td>
<td>100%</td>
</tr>
</tbody>
</table>

Note: Average Time on Case Entry = :21 Average Time on Key Questions = :41

Agency: Metropolitan Ambulance Service, Melbourne, Australia
Case Date Range: 4/1/1998 to 8/16/1999

### Determinant Level

<table>
<thead>
<tr>
<th>Determinant Level</th>
<th>Interrogation Time</th>
<th>Number of Cases</th>
<th>Percentage of Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECHO</td>
<td></td>
<td>443</td>
<td>2.0%</td>
</tr>
<tr>
<td>DELTA</td>
<td>:37</td>
<td>6,997</td>
<td>31.9%</td>
</tr>
<tr>
<td>CHARLIE</td>
<td>:59</td>
<td>3,788</td>
<td>17.3%</td>
</tr>
<tr>
<td>BRAVO</td>
<td>:39</td>
<td>6,724</td>
<td>30.6%</td>
</tr>
<tr>
<td>ALPHA</td>
<td>:59</td>
<td>2,716</td>
<td>12.4%</td>
</tr>
<tr>
<td>OMEGA</td>
<td>:55</td>
<td>1,274</td>
<td>5.8%</td>
</tr>
<tr>
<td><strong>ALL</strong></td>
<td>:53</td>
<td>21,942</td>
<td>100%</td>
</tr>
</tbody>
</table>

Note: Average Time on Case Entry = :22 Average Time on Key Questions = :29

Agency: Emergency Medical Services Authority, Tulsa/Oklahoma City, U.S.A.
Case Date Range: 4/1/2002 to 6/22/2004

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*Fig. 1-11. The “Time Standard” Dinosaur at Dispatch, by Jeff Clawson, M.D.*
Misconception Three. The dispatcher is too busy to waste time asking questions, giving instructions, or flipping through card files.

The Facts. The uninitiated have previously complained that dispatchers should not waste precious seconds asking all these questions. The priority dispatch process does demand more of the EMD, but the information needed to do the job properly can usually be obtained in the same or less time than the freestyle methods of yesteryear.

The time required to interrogate is not a factor in most cases. Call-processing time was carefully observed in Los Angeles in 1988, before and after implementation of priority dispatch. The average time required to process a call before initiating use of the system was 72 seconds. When first implementing priority dispatch, this average time increased to 80 seconds, but after less than one week, total call-processing time had returned to 72 seconds—even allowing for the new provision of Post-Dispatch and Pre-Arrival Instructions. Not only was the overall call processing time the same, but the information obtained was more usable and complete. In fact, further evaluation indicated that interrogation time actually decreased because the added time of occasionally providing CPR or other extended Pre-Arrival Instructions did not increase call processing time overall. And, of great importance to the system’s managers, the number of EMDs required to process calls both before and after priority dispatch implementation remained the same!

Overall, this saves the system time in the long run, because the Key Questions assist the EMD in gathering the information necessary to establish the correct level of medical response.

Remember that a full interrogation is not always necessary before sending help. There are two regular points at which the Chief Complaint Protocol directs the EMD to send assistance. The first, which is nearly immediate, simply allows for early recognition of time-critical situations where the patient is not breathing or where breathing is uncertain. A full-blown EMS response is made at that point. The difference is that for the other cases—the vast majority—priorities are objectively sorted out before resources are sent. A good maxim to remember is “It takes the same time to ask the right questions as it does to ask the wrong questions,” and if you ask the right questions, you get the right answers.

Misconception Four. The medical expertise of the dispatcher is not important.

The Facts. The medical expertise of the EMD is certainly important. This misconception is largely dead as it pre-dated the EMD standard and was essentially the old excuse, “They don’t need any medical training, they’re just clerks.” However, a form of this improper thinking that still persists is that those in medical dispatch positions should have various types of field training—such as Emergency Medical Technician (EMT) or paramedic. Such issues are often raised by centers that have traditionally utilized these training curricula or by previous field personnel with these training levels, when a move is made to switch to professional EMDs who have no other medical training. This often confuses the issue. The official position of the Academy is that no matter what the previous training or experience of the dispatcher might be, they must be trained and certified as EMDs—there are no exceptions. As the old saying goes, “If you want someone to function as an apple, don’t train them to be an orange and assume that because they are round and a fruit, they can do the same job.” In 1989, the National Association of EMS Physicians (NAEMSP) directly confronted this issue by stating:

In order to prioritize calls properly, the EMD must be well-versed in the medical conditions and incident types that constitute their daily routine.

### Does It Take More Time or More Control Staff?

<table>
<thead>
<tr>
<th></th>
<th>Before</th>
<th>During</th>
<th>One Week After</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average time in queue</td>
<td>7 sec.</td>
<td>8 sec.</td>
<td>7 sec.</td>
</tr>
<tr>
<td>Total call-processing time</td>
<td>72 sec.</td>
<td>80 sec.</td>
<td>72 sec.</td>
</tr>
</tbody>
</table>

Total staffing before and after implementation remained the same (approximately 70 EMDs).

Fig. 1-12. City of Los Angeles implementation, 1988; population 3.2 million (1,200 calls per day).
Training in these priorities must be detailed and dispatch-specific (not EMT or paramedic training per se). Since, much of the knowledge and many of the skills required by the EMD are dispatch-specific, a curriculum for their training differs substantially from those used in the preparation of EMTs or paramedics. Training as an EMT or paramedic does not adequately prepare a person for the role of an EMD. Much of the required EMD curriculum cannot be found in standard EMS training curricula. It consists of content and emphasis which differ significantly from that used for the training of all other health professional and public safety dispatchers. The unique teaching forum necessary to provide this essential training requires unprecedented cooperation between the diverse disciplines of telecommunications and prehospital and emergency medicine. Essentially, EMD training is required for all dispatchers functioning in medical dispatch agencies, and contains significant content and competence which differs substantially from that ordinarily provided to EMTs and paramedics.20

An EMD should always receive medical dispatch-specific training and then, under quality management, evaluative and feedback mechanisms, be entrusted with the power necessary to effectively use that training. It is important that this training be specific to the EMD’s understanding of, and ability to use, the central tool of their practice—the protocol. Hundreds of medical dispatch centers staffed by thousands of EMDs with no other medical training effectively and admirably do just that for the number-one employer of EMDs in North America. And that employer is not ambulance services, hospitals, or fire departments—it is rural law enforcement.

Misconception Five. Phone information from dispatchers cannot help victims and may even be dangerous.

The Facts. This was initially the most widely stated misconception, but in the twenty-five years since the first edition of this textbook, it has become the most thoroughly debunked misconception in the industry. Hundreds, and more likely today thousands, of cases involving effective telephone-directed formal care take place every day in myriad communication centers that have embraced this very important facet of priority dispatch. The additional fact remains that while, historically, dozens of lawsuits have been initiated against medical dispatch centers, an increasing number of these have been directed at what plaintiff’s attorneys have now called “dispatcher abandonment”—the failure to provide Pre-Arrival Instructions. Universally these have involved those not utilizing priority dispatch. Indeed, the provision of Pre-Arrival and Post-Dispatch Instructions is clearly considered the standard of care and practice in North America and the U.K. Two statements in the NAEMSP Position Paper on EMD seem to sum things up from any potential patient’s viewpoint: “Pre-arrival instructions are a mandatory function of each EMD in a medical dispatch center,” and, “Standard medically approved telephone instructions by trained EMDs are safe to give and in many instances are a moral necessity.”20

Misconception Six. More personnel and more units at the scene are always better.

The Facts. It is possible to send an appropriate emergency response without utilizing multiple vehicles. An appropriate response is nearly always better than a maximal response. Overkill does not equal adequate handling of the job, and it is simply not wise to react this way at dispatch when non-critical and non-life-threatening situations are clearly identified. Prioritization of response has been the method of reasonable management of valuable and often scarce prehospital resources. The article “Medical Priority Dispatch—It Works” described the early experience of the Salt Lake City Fire Department’s prioritization of response.3 They reported a 50 percent reduction in total responding vehicles, a 50 percent reduction in HOT responses, and the elimination of 33 percent of calls run by the fire department due to referral of non-urgent Basic Life Support cases to the private ambulance service, Gold Cross. These experiences have been reproduced in many other systems. The management of response and personnel is the central premise of priority dispatch, whose mission can be summed up by the goal of “sending the right thing, to the right patient, at the right time, in the right way, and doing the right thing for the patient through the caller until the troops arrive.”

Misconception Seven. It’s dangerous not to maximally respond or not to respond lights-and-siren.

The Facts. Unfortunately, HOT responses are not without significant risk. Each year thousands of accidents
occur as the result of extreme response and transport practices. Thousands of people are injured and dozens are killed. In 1990, the Academy funded a revealing press clipping data collection of emergency medical vehicle collisions in the U.S. Figure 1-13 is a partial depiction of the raw data obtained.

Of the 298 EMVCs documented in the study, 205 resulted in injury or death—*injuring* 537 people and *killing* 62.

The more appropriate use of warning lights-and-siren will make the First Law of Medical Practice more relevant to emergency medical services and medical dispatch: “First, do no harm.”

HOT responses do not save enough time to affect outcome in most cases. Much of EMS response rationale has evolved from long-standing public safety practices. But medical emergencies are not the same as fires (see fig. 1-14). A fire usually gets worse as the seconds tick by. In most cases it is considered to be escalating until proven otherwise. However, the great majority of medical situations are not getting worse as time passes. Many patients who receive a HOT ride to the hospital wait from 30 minutes to several hours for complete diagnostic workup and treatment. Are the few seconds saved running HOT worth it? Probably so in choking, respiratory failure, cardiac arrest, or severe bleeding situations. But not most others. An EMD using Chief Complaint Protocols will properly determine when the few seconds or minutes shaved off by a HOT response will make no difference, such as in chronic, unchanging, stable, or improving situations.

Regular use of lights-and-siren is a bad habit in emergency services generally; they should not be used simply because they are there. Through proper caller interrogation and Pre-Arrival Instructions, those with minor—even moderate—*injuries* can safely await emergency responders who travel in the much safer, non-emergency mode (referred to in this text as COLD). Because relatively sophisticated medical expertise goes to the problem, it is almost always possible to travel to the medical treatment center COLD as well. The rapidly mounting evidence that COLD responses, as well as COLD transports, can be reliably and appropriately selected, as well as being significantly safer, is presented in Chapter 2: Basic Telecommunication Techniques.

Many services now run significant numbers of their calls COLD. The seminal position paper by NAEMSP titled “Use of Warning Lights and Siren in Emergency Medical Vehicle Response and Patient Transport” has set an appropriate standard of practice with an emphasis on medical dispatch processing as central to the proper management of responses.

**Misconception Eight. Protocol and training is all that’s needed to “do EMD.”**

**The Facts.** Appropriate resource allocation can be accurately determined by EMDs using the priority dispatch system correctly. Unfortunately, many EMS managers have decided to try incomplete and partial forms of EMD without thorough research, education, and compliance based on quality management principles. Some systems misinform their communities that they are using EMD when they are, in fact, only providing ad-lib (not scripted) telephone aid and only utilizing partially or untrained dispatchers. Others try to use resource prioritization without fully understanding the concepts and underlying principles. This

<table>
<thead>
<tr>
<th>Statistical Information from EMVC Study</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>To scene</strong></td>
</tr>
<tr>
<td>16 (37%)</td>
</tr>
<tr>
<td>18 (42%)</td>
</tr>
<tr>
<td>9 (21%)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
</tr>
</tbody>
</table>

Fig. 1-13. Statistical Information from U.S. EMVC study, October 1, 1989, through September 30, 1990.
is called “the illusion of priority dispatch.” Failure to be thorough at dispatch can have disastrous repercussions.

Response prioritization is the most fundamental concept of priority dispatch. To “be doing EMD” correctly, dispatch centers and their dispatchers must be reproducibly and closely using the protocol in order to safely match pre-determined response modes to caller situations. We have simplistically defined priority dispatch as “sending the right thing, to the right patient, at the right time, in the right way, and doing the right thing for the patient through the caller until the troops arrive.” EMD managers and EMDs must understand what the “right thing” actually is (i.e., Advanced or Basic Life Support unit), how long “the right time” is, and what mode “the right way” implies (i.e., HOT or COLD response). They must also understand and use the Pre-Arrival and Post-Dispatch Instruction sequences in the protocol appropriately and correctly.

There is more to this than simply purchasing a protocol and initially training dispatchers to use it.

The protocol (and therefore the entire EMD system) can only function correctly when the EMD’s compliance to the protocol (strictly following it) is high or absolute. In order for EMDs to achieve these levels of compliance, management must be prepared to honestly, regularly, and impartially provide them with performance feedback; if EMDs are not told when they make a mistake, they cannot correct that mistake in the future. Provision of this information to the EMDs, as part of an ongoing total quality management process, requires unbiased review of recorded cases by a trained reviewer. If EMDs are regularly provided with information pertaining to how well they are doing (rather than only being told when they are doing something wrong as a punitive measure), compliance to the protocol can skyrocket. In centers (and only in centers) where these ongoing quality management processes are in place, we routinely see overall compliance above the 95 percent level. Complete understanding of this principle of EMD is a moral obligation because the lives of field personnel, their patients, and members of the general public might be at stake.

To practice incomplete EMD is risking the consequences of poor patient care at a time when a much more informed and demanding public has grown to expect services that are often demonstrated to them graphically and convincingly on primetime television. Priority dispatch must be properly understood by those with the power to initiate and manage its use. Responsible public safety systems must resist taking shortcuts. By plugging all the holes that the misconceptions represent in the fabric of pre-arrival and pre-hospital care, a safer, more efficient, and effective medical dispatching system has emerged.

**Misconception Nine.** We can do this stuff ourselves (home-grow our protocols).

**The Facts.** It has been said that there are a million ways to practice medicine, and nothing could be truer. It is also unfortunate that a million ways can’t be right, or even be relatively best. In fact, a million ways practiced by the million doctors on earth conjures up an image of professional chaos that has been ultimately prevented by the formation of functional standards of care and practice throughout the medical world.

But medical dispatch protocol—how tough can it be? Write down some questions, add a bunch of telephone instructions, temper it by stating that the EMD is or should be trained as an EMT or a paramedic, and a dispatch system you have!

![Fig. 1-14](image-url) Fire and EMS dispatching comparison.

---

1.9
Just as communication centers stopped writing their own computer-aided dispatch (CAD) systems, and 9-1-1 centers stopped building their own telephone switching devices, anyone remotely knowledgeable about emergency dispatch stopped “doing it themselves” a long time ago. Would you build your own defibrillator just because you could? Not likely, and not safe.

But a “write-it-yourself” medical dispatch protocol? A dispatch protocol must adhere to a set of practice standards that uniformly and routinely identify all necessary objectives (goals) of each emerging, but different, call. It must define the world of medicine as seen through the “eyes” of dispatch. It must also stay current with the changing world of medicine and evolving resuscitative science. It must be logically and graphically constructed to enhance its use in a time-restricted environment. The logic must be internally (alpha) tested and all training and support material—manuals, quality assurance processes, scenarios, and related policies—kept in sync with the current protocol and standard of care and practice.

Even centers using the IAEMD protocols have had some legal “near misses” due to having obsolete protocols, some as out-of-date as 5 to 10 years behind the current version. The testing issue is another significant problem with the “do-it-yourselfers.” We are not aware of a single official test, internal or external, of any homegrown or home-maintained protocol or set of guidelines anywhere—ever. If you’re the only one using that particular protocol, who beta tests it for you—you yourself?

Of course the above is an abbreviated case for a unified, scientific method-based protocol with shared coding, data sets, logic, quality improvement methods, case scoring formulas, automation, and evolution. There could be a million ways to do CPR or BLS—but there aren’t. The AHA/ILCOR unified method of resuscitative practice is widely, if not universally, embraced.

Virtually every place that has been sued for dispatch misadventures is a do-it-yourselfer, growing their own cards or self-manipulating a set of guidelines—with or without any medical control oversight. One large Midwestern city has suffered at least 10 dispatch-related lawsuits since 1988. Most settled for big bucks and several were lost (one for 3 million and another for 50 million—it’s on appeal, of course). The Standards Councils and Curriculum Boards process of the Academy is a well-proven risk management tool that sets the correct tone for safe, efficient, effective, and current dispatch medical practice. It forms the hub of what we in public safety would term a big “user group.” Findings, corrections, improvements, and emerging science are shared by all through this very successful method.

There are those who do it, and those who do it right. If anyone ought to do it right, shouldn’t that be 9-1-1? 375

Medical Control and the EMD
Success has spawned additional responsibilities for EMDs now that they are more widely acknowledged to be members of the EMS team and the first professional link in the chain of survival. Because the EMD is interacting daily with people in medical crisis, there is a clear need for medically attuned input to the appropriateness of those actions. Thus the dispatch process comes under the watchful eyes of medical control.

Until recently, physician oversight of dispatchers lagged significantly behind other areas of prehospital care. The “out of sight, out of mind” physical existence of the EMD has been identified as a contributing factor to this evolutionary dawdling. The National Association of EMS Physicians published its position paper in 1989 that helped create the needed national-level emphasis on EMD:

Medical direction and control for the EMD and the dispatch center . . . constitutes part of the prescribed responsibilities of the medical director of the EMS system. The functions of emergency medical dispatching must include the use of predetermined questions, pre-arrival telephone instructions, and pre-assigned response levels and modes. 20

NAEMSP advocates thorough and correct implementation of Emergency Medical Dispatch. The process of implementation must be regularly reviewed by impartial, objective people who understand the nature of the changes that have occurred. This includes those within the medical control structure who oversee the medical expertise and performance of EMDs.

As already stated, an EMD does not need to be an EMT or a paramedic. The curriculum and education needed for communication center activities are very different from those needed for hands-on care. 20 This means EMDs are increasingly recognized as medical colleagues in their own right. Although the way medical
care is given differs, the EMD is as responsible as anyone who physically touches the patient. Imagine correctly helping a father deliver his child by telephone! Or imagine knowing how to obtain and give the information necessary to provide correct, useful first-aid suggestions via telephone. When appropriate, the EMD should provide a brief telephonic hand-off report to field personnel when they arrive at the scene, just as other medical colleagues do face-to-face.

By both national and international standards, EMDs perform their duties under the guidance of medical control. Because of increased exposure to intervention opportunities, their actions should be properly and consistently reviewed through a management-based quality assurance (QA) and quality improvement (QI) process. This closely parallels the risk management programs established as a normal part of the practice of other allied health professionals.

Who controls dispatch policy and practice? Many medically oriented participants in the process of developing EMD have hesitated because their medical connection to dispatch seems less tangible. The element of quality improvement and medical direction is presented in Chapter 12: Quality Management.

The Spock Principle
The advocacy of system versus patient is a dilemma continually facing the EMD in appropriately balancing the importance of one call with all potential calls. Managers and supervisors responsible for medical dispatch programs are also forced to deal with similar issues.

We have simplified the understanding of this aspect of medical dispatch from the ethical viewpoint of the Spock Principle. At the end of the motion picture Star Trek II, the Starship Enterprise faced certain destruction from a runaway fusion reactor. The logical Vulcan, Mr. Spock, placing personal safety aside, entered the main reactor area unprotected. Now exposed to lethal radiation, he repaired the engine and saved the Enterprise and all on board. When asked by an emotional Captain Kirk why he did it, he gave the memorable reply, “The good of the many outweighs the needs of the few or even the one.”

While the EMD is the caller’s personal advocate during single call episodes (the one), the EMD must also maintain the continuous role of advocate of the system (the many). The process of safe and effective prioritization of calls, and even the activities within a call, allows the EMD to balance these competing responsibilities while adhering to this important principle.

Traditional Roadblocks to Change
In many cases, the hardest part in the local advancement to EMD is making the transition happen in the first place. Changing from an archaic system that has a weak link at the very spot where coordination and control ought to be strongest requires the support and encouragement of all levels of authority within a public safety or EMS system. The effect of resistance to change, especially by those in power, can be daunting! But the appeal of a well-rounded team that uses a system that can save money has enticed even hard-core bureaucrats to modify their thinking about EMD. With increased recognition as the international standard for medical dispatch, the arguments for implementation of priority dispatch are even more compelling.

It is said that the only person who likes change is a wet baby. The change process requires effort, enthusiasm, and energy. The status quo is usually much more appealing, particularly when implementation is going to be disruptive. Perhaps it would be more effective to focus on how to minimize the difficult aspects of change.

Change requires recognizing that humans are bound by habits. If a dispatcher is in the habit of hanging up on callers after getting the address and callback number, new behaviors must be learned. Fear is another common impediment to change. It is much easier to continue a familiar, if outdated, routine whether or not the old system is in the best interests of the community. Education maximizes the acceptance of the change process. Those convinced that priority dispatch is the best system must help those who resist by explaining the benefits of implementation and the risks of not doing so. This becomes easier in an environment of support, particularly when the supporters are those with the power to mandate change.
The EMD as a Medical Professional
There is probably no medical profession other than Emergency Medical Dispatch in which the core time for patient evaluation and decision making is routinely around one minute, and where more is potentially at stake on a case-by-case basis. Unfortunately the EMD has not been generally accepted as a profession by EMTs, paramedics, and other members of the medical team. Thus, EMDs in many places occupy somewhat ambiguous roles within the medical profession and public safety agencies. One of the difficulties EMDs have had in gaining acceptance as medical professionals is that the rest of the medical profession isn’t clear on the EMD’s role and whether the EMD’s tasks are truly medical. Most pre-hospital care providers are directed and regulated by medical control physicians and some form of governmental authority. In contrast, EMDs are typically hired, trained, managed, and paid by law enforcement, fire, or ambulance agencies. In many areas, the EMD’s practice lacks adequate medical control and management. No quality improvement is undertaken, and the dispatchers lack professional certification. However, properly-trained EMD performance is based on medical protocols similar to other medical professionals except in two ways: a lack of direct patient contact and the abbreviated decision-making time frame.

Practice Dissimilarities. EMDs essentially practice their profession via remote control, dealing nonvisually with someone who is generally not the patient. The lack of direct access requires EMDs to rely heavily on interrogative skills.

However, with tested protocol-driven questioning, EMDs can successfully elicit the necessary information to dispatch appropriate personnel with adequate information.

Unfortunately, in addition to the physical constraints, there exists system-imposed time limits on Emergency Medical Dispatch. “The 60-second dilemma” was a phrase coined several years ago to emphasize that in today’s high performance EMS systems, the EMD has only 60 seconds to interrogate (i.e., evaluate the situation) and render a decision (i.e., provisional diagnosis). Very few, if any, medical professionals are required to consistently perform the evaluation and decision-making part of their patient care process in 60 seconds. Even more astounding is that there is no scientific rationale for the 60-second time frame for dispatching.

The 60-second time interval should be used as a goal or objective to strive for in most situations—not a rule or absolute upper limit. In most medical situations,
the time to dispatch should not be treated as a ticking time bomb, since the majority of incidents are not escalating in any appreciable way, whether life-threatening or otherwise. With this in mind, 75 to 90 seconds is a more reasonable goal for most calls of a non-time-life priority basis, and some places are instituting just that. As Thera Bradshaw, past-president of the National Emergency Number Association, stated, “It’s time we start doing it right, not just fast.”

**Practice Similarities.** Fortunately, the similarities between EMDs and other medical professionals are more prominent. In fact, the individual practice of a physician-managed EMD closely resembles the emergency medical model.

As is evident from the above comparison, the elements of medical care cross over easily and are equally relevant to both groups. For example, the primary survey must be as consistent and complete for the EMD as for the hands-on medical provider. No one can afford to abort or supersede this evaluation, no matter if these initial findings seem obvious. The importance of this is reflected in the Four Commandments, the EMD’s term for the dispatch primary survey. Like an inconsistent EMT who checks the airway, but not breathing and circulation, an EMD who does not always ask these four questions risks missing essential information. As with an EMT’s secondary survey, these answers provide relevant information regarding patient care, scene safety, and response choices. Omissions in the information-gathering process can result in sending the wrong response and providing the wrong treatments.

Perhaps this point can be made by asking yourself, “When you or a family member are taken to the emergency department, do you want the emergency physician to perform a complete or an incomplete evaluation?” Keeping in mind that each of the interrogation questions may lead to a different evaluative conclusion, different treatment, different information relay, or different advice, EMDs cannot assume answers to questions they never ask.

Compliance to the EMD protocol ensures all essential elements will be “found,” and clarification or enhancement of the protocol will be accomplished only when necessary.

**De Luca’s Law**
EMDs will follow all protocols per se, avoiding freelance questioning or information unless it enhances, not replaces, the written protocol questions and scripts.

**The EMD as an Advanced Life Support Professional.** It is widely believed a trained EMD is essentially a Basic Life Support–level provider. Reacting to this notion, an EMD once stated in a self-mocking tone, “That’s right, we’re sub-basic life support life-forms.” This belief, however, is incorrect. The basis of the core curriculum for EMD training, specifically the “dispatch priorities” is, in fact, the Advanced Life Support level.

What has confused most casual observers is that the EMD appears to perform Basic Life Support tasks, such as CPR, the Heimlich maneuver, and airway control. However, the EMD is not required to perform the Basic Life Support skill but instruct it on the fly. In fact, the majority of the information in the EMD curriculum is derived from the knowledge base of emergency physicians and nurses. For example, the commonly taught dispatch rule, “A healthy child (or young adult) found in cardiac arrest is considered to have a foreign body airway obstruction until proven otherwise,” cannot be found in standard publications such as Karren and Hafen’s EMT text, Nancy Caroline’s paramedic text, or the basic text by the American Academy of Orthopedic Surgeons. Most paramedics eventually learn this “rule” from emergency department physicians.

This level of knowledge is why it is necessary for ALS-level personnel (paramedics, RNs, and MDs) to train EMDs. No EMD training program should use non-ALS personnel as instructors. The use of specific EMD protocols to aid in the provision of a complete and comprehensive “remote” assessment of the patient in combination with on-the-fly bystander training requires that the EMD process information or “think like” ALS personnel.

**The Medical Versus the Protocol Model of Practice.** With all this knowledge, then why shouldn’t EMDs routinely practice their medical routines as doctors do—with a formal protocol in hand? After all, the practice of medicine by physicians appears to be safe without the use of well-defined protocols. The answer
lies in a very important distinction between physicians and “paramedical” practice methods, which can be illustrated by comparing the “medical model” of medical practice with the “protocol model” of evaluation and care.

Physicians are allowed by law to deliver medicine in the way they deem best because of years of rigorous education and training and even more years of supervised post-doctoral practice. The seasoned practitioner in his or her office working from years of experience perhaps best illustrates the medical model of practice. In contrast, the new physician or intern with approximately 10,000 hours of medical training and experience on his or her first official day of practice is hardly an amateur, but a professional who relies on routine access to pertinent additional information. Pockets are stuffed with all kinds of helpers: The Harriet Lane Pediatric Handbook, the Washington Manual of Therapeutics, the Surgical Manual, and a plethora of drug company-provided neonatal and gestational plastic calculators. Such “peripheral brains” are commonly used by medical professionals to ensure complete and accurate medical treatment under demanding time constraints. They are called protocols.

Compare to that the typical paramedic who has 1,000 to 1,500 hours of training and the EMT who has 120 to 200 hours of training. The current minimum amount of training for an EMD is 24 hours. Thus, it’s easy to see why an EMD may need a “peripheral brain.” It need not be a big peripheral brain, but simply well-designed, medically sound, and up-to-date.

The EMD and other out-of-hospital providers, therefore, use the protocol model of medical practice. The protocol model is the backbone of the EMD’s permission from responsible medical authority to “practice” Dispatch Life Support (DLS) medicine. As such, compliance to the protocol model significantly enhances the EMD’s method of practice by accomplishing the following:

- Executing the basic rules of dispatch medicine
- Standardizing patient and situational evaluations
- Permitting the EMD to concentrate on processing obtained information
- Reducing dispatcher bias by formalizing interrogation question structure
- Structuring medical pathways to further evaluations, verifications, and necessary treatments
- Reducing the time required for evaluation through optimization of interrogation and decision processes
- Enabling rapid, consistent evaluation and treatment within a time-restricted environment

For example, physicians and nurses use a protocol model for resuscitation and trauma codes. The whiteboard found in every major trauma room lists an orderly series of actions, tests, and treatments that must be accompanied in rapid but standardized resuscitative efforts—in essence, a protocol.

The EMD–EMS Partnership. The time has come when we must think of EMDs as medical professionals and, in every sense of the word, medical colleagues, who care for the patient when other medical professionals can’t. They must receive the tools, training, and time to perform their jobs well. Doing it right is even more important than doing it fast. This fact should be understood and embraced by public safety management and medical control.

Rather than decry the formal use of protocol as somehow demeaning, punitive, robotic, or even non-medical, it is important to understand that it is the tool of both field practitioners and EMDs. It speeds up and improves the evaluation and decision-making in both EMD and traditional medical practice.

Non-EMDs can help the professionalizing process in a number of ways. Ask about EMDs in prehospital care surveys. Recognize them as part of the EMS team in papers and articles. Routinely list them as part of the medical control span of responsibility. Include them in consideration of EMS funding issues, as well as for reasonable parity in pay.

EMDs can demonstrate their professionalism to their medical colleagues by seeking ongoing medical dispatch education to keep current as their relatively new profession and protocol evolve: certifying and recertifying;
being customer service-oriented, rather than complaint-driven and reactive in attitude; and maintaining and demonstrating a high respect for the human conditions entrusted to them, whether minor indecision on the part of the caller or outright terror at the scene. Such actions by those in responsible positions within public safety, EMS, and the medical community, as well as by EMDs themselves, will ultimately place the label of “medical professional” on the EMD, where it should have been all along.

Summary: A New Era in EMS
In response to the growing acceptance of priority dispatch, the standards of acceptable system design for communication centers have been redefined. No longer is it tolerable for the dispatch office to be the receptacle of marginal or disciplined field providers. Once viewed as a good location for organizational dumping of sick or injured personnel, the up-to-date communication center now enjoys increased levels of respect and professionalism.

Selective prioritization of calls does not equal downgrading of service. True, it may reduce the thrill and the drama associated with seeing several emergency units roar by. But in the end, it upgrades the quality of care in the community in many ways: fewer accidents, better understanding of the problem before arrival, better preparation by the crews as to what to expect, and more enthusiastic crews. They know chances are good that their skills are what is needed at a particular scene.

Pressures to hold down the cost of municipal services will increase in coming years. Traditional medical care has been replaced by a more cost-conscious process of managed care. Priority dispatch allows the EMS team to not respond reflexively, but with the informed, trained capability now within reach of the medically trained telecommunication specialist—the Emergency Medical Dispatcher.

Change is the way the future reveals itself.
—Unknown futurist